Patent Claims

Honeycomb-Shaped Carbon Element

1. Use of a prefabricated base body that is made from resin-impregnated paper or fleece and has a honeycomb structure for the production of a carbon element having a honeycomb-shaped structure, wherein the base body is first pyrolyzed and then at least stabilized and/or compressed.
2. Method for producing a carbon honeycomb element pursuant to claim 1, characterized in that a honeycomb element made from resin-impregnated Aramid paper is used as the base body.
3. Method pursuant to claim 1, characterized in that the pyrolyzed base body is stabilized and/or compressed by means of material precipitation from the gaseous phase.
4. Method pursuant to claim 3, characterized in that the pyrolyzed base body is stabilized and/or compressed in particular by means of CVI and/or CVD precipitation with C, SiC, B_4C and/or Si.
5. Method pursuant to claim 1, characterized in that an SiC or PyC layer is formed on the pyrolyzed base body.
6. Method pursuant to claim 1, characterized in that the pyrolyzed and compressed or stabilized base body is coated with carbon-containing solutions such as resins and then again pyrolyzed.
7. Method pursuant to claim 1, characterized in that the pyrolyzed and compressed or stabilized base body is coated with a ceramic slip, which is converted into ceramics such as SiC.
8. Method pursuant to claim 1, characterized in that the base body having the honeycomb structure is carbonized at a temperature T_1 wherein $850^0C \leq T_1 \leq 1100^0C$, especially $900^0C \leq T_1 \leq 1000^0C$.
9. Method pursuant to claim 1 or 8, characterized in that the base body is graphitized at a temperature T_2 wherein $1700^0C \leq T_2 \leq 3100^0C$, especially $1800^0C \leq T_2 \leq 2450^0C$.

10. Method pursuant to claim 1, characterized in that as the base body a body is used that comprises high temperature stable fibers such as carbon fibers or SiC fibers or pyrolyzable fibers with sufficient carbon residue such as phenolic resin fibers, Aramid fibers, flax, hemp or other cellulose fibers as the reinforcing material.

11. Method pursuant at least to one of the above claims, characterized in that the pyrolyzed and stabilized or compressed base body is subsequently subjected to further strengthening or finishing operations.

12. Method pursuant at least to one of the above claims, characterized in that the pyrolyzed and stabilized or compressed base body is siliconized.